



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/927,201	08/10/2001	Richard L. Baer	10010802-1	3806

7590 12/09/2005
AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
Intellectual Property Administration
P.O. Box 7599
Loveland, CO 80537-0599

EXAMINER

AGGARWAL, YOGESH K

ART UNIT	PAPER NUMBER
----------	--------------

2615

DATE MAILED: 12/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/927,201

Applicant(s)

BAER, RICHARD L.

Examiner

Yogesh K. Aggarwal

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-11,13-18,20-22,24 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,7,8,10,11,16-18 and 20-22 is/are rejected.
- 7) ☒ Claim(s) 4-6,9,13-15,24,25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

1. Applicant's arguments filed 09/15/2005 have been fully considered but they are not persuasive.

Applicant argues "Kasahara et al. does not disclose or suggest determining a flicker function that models light emission of the periodically varying light source, wherein said flicker function is a function of flicker amplitude, flicker frequency and flicker phase of the periodically varying light". The Examiner respectfully disagrees. Kasahara teaches at col. 9 lines 6-10, figure 4a that the output of dividing circuit 4 (figure 1) on the ordinate axis represents flicker and abscissas represents line number at a frame. Therefore in figure 4a, flicker is shown to be varying with amplitude, frequency and phase of a periodically varying light source. Line numbers of a particular frame represent the luminance level of particular line in a frame on which light from the varying light source is converted into electrical energy also stated in col. 8 lines 28-32).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 11, 17, 20 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by (USPN 6,710,818 to Kasahara et al.).

[Claim 11]

Art Unit: 2615

Kasahara discloses a method for removing image artifacts from an image of a scene illuminated by a periodically varying light source, said image represented by an image data array comprising a plurality of rows of image data, the method comprising:

determining a flicker function that models light emission of the periodically varying light source (e.g., column 8, line 28 – column 9, line 10), wherein said flicker function is a function of flicker amplitude, flicker frequency and flicker phase of the periodically varying light source (e.g., as shown in Fig. 4A the flicker is a function of amplitude, frequency, and phase based on the varying light source, Col. 9 lines 6-10, figure 4a teach that the output of dividing circuit 4 (figure 1) on the ordinate axis represents flicker and abscissas represents line number at a frame. Therefore in figure 4a, flicker is shown to be varying with amplitude, frequency and phase of a periodically varying light source. Line numbers of a particular frame represent the luminance level of particular pixel on which light from the varying light source is converted into electrical energy also stated in col. 8 lines 28-32) and

processing said image data using said flicker function so as to remove said image artifacts from said image (e.g., column 15, lines 48-51; column 16, lines 5-13).

In regards to claims 1, 17, 20 and 21 see Examiner's notes on the rejection of claim 11.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2615

4. Claims 2, 7, 8, 18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 6,710,818 to Kasahara et al.) in view of Iwakawa et al. (US Patent # 6,208,433).

[Claims 2, 18, 22]

Kasahara fails to disclose image data comprises an image data array comprised of a plurality of rows of image data, and wherein said processing step comprises dividing said image data by said flicker function on a row-by-row basis. However Iwakawa discloses said image data comprises an image data array comprised of a plurality of rows of image data, and wherein said processing step comprises dividing said image data by said flicker function on a row-by-row basis (e.g., Examiner notes that the scene is scanned by the one-dimensional image sensor so as to generate two-dimensional image data wherein each row is corrected by dividing the image signal by the flicker function; column 5, lines 14-19 and 41-67).

Therefore taking the combined teachings of Kasahara and Iwakawa, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have an image data array comprised of a plurality of rows of image data, and wherein said processing step comprises dividing said image data by said flicker function on a row-by-row basis in order to prevent the flicker due to line-by-line deviation (col. 5 lines 64-67).

[Claims 7 and 8]

In regards to claims 7 and 8 see Examiner's notes on the rejection of claim 11 above.

5. Claims 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 6,710,818 to Kasahara et al.) in view of (Applicant's Admitted Prior Art, herein AAPA).

In regards to claim 10 Kasahara does not disclose that the image data is collected from a CMOS image sensor utilizing a rolling shutter to provide exposure control. Examiner notes the

Art Unit: 2615

specification on page 2, lines 7-12 wherein AAPA discloses that it is known to utilize a CMOS image sensor with a rolling shutter to provide exposure control. AAPA further discloses on page 3, lines 1-7 that in using a rolling shutter, since each row of image data is produced at a different time, under a varying light source flicker will be produced. Examiner notes that scanning a scene using a linear image sensor is functionally equivalent to using an image sensor with a rolling reset, since each row of image data is produced at a different time and the scene is sequentially scanned. Examiner notes that one skilled in the art would clearly recognize that replacing the moving mirror and linear image sensor with a CMOS image sensor utilizing a rolling reset would reduce the number of mechanical parts and further would enable a reduction in the frame period for scanning the scene since multiple lines are being exposed in parallel using a rolling reset. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have replaced Kasahara's linear image sensor with a CMOS image sensor with a rolling shutter to provide exposure control in order to reduce the number of mechanical parts and further enable a reduction in the frame period for scanning the scene as would be recognized by one skilled in the art.

In regards to claim 16 see Examiner's notes on the rejections above.

Allowable Subject Matter

6. Claims 4-6, 9, 13-15, 24 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K. Aggarwal whose telephone number is (571) 272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571)-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YKA
December 4, 2005


DAVID OMETZ
SUPERVISORY PATENT EXAMINER